



**WATER SOFTENER
SERIES 500
12 DAY TIMER**

**INSTALLATION & OPERATING
INSTRUCTIONS**

Model : **AS1029-E**

Serial No :

Manufacturer and Supplier of



FILTRATION & WATER TREATMENT PRODUCTS
for commercial, industrial and residential application



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HARDNESS TEST

1. Water to be tested should be taken from a tap after the water softener
2. Measure 10ml of water into plastic bottle supplied (approximately 1/3 full)
3. Add one Yes/No tablet to sample water, replace cap and shake until tablet has completely dissolved.
(NOTE: do not handle Yes/No tablet with fingers)
4. The final colour to be obtained for soft water is green. (Note: The shade of green may vary.) If the colour turns red, the water is above 20 mg/l hardness, therefore another regeneration is recommended.
5. Rinse plastic bottle after each test has been completed.
6. When used as above, the tablets change the colour from green to red at a hardness of approximately 20ppm based on a sample volume of 10mls.

Other hardness test kits are available for more accurate testing eg.

Hardness Tablets

Directions: Take a 50ml sample of water in a screw capped bottle. Add one (1) tablet to sample, shake or crush to disintegrate. Repeat until last trace of reddish tinge disappears. The final colour is usually blue but with some water a greyish coloured end point is obtained.

Using 50ml sample -

Hardness ppm = (number of tablets x 40) - 20

LR (BW) Tablets

Directions: Take a 100ml sample of water in a screw capped bottle. Add one (1) tablet to sample, shake or crush to disintegrate. Repeat until last trace of reddish tinge disappears. The final colour is usually blue but with some water a greyish coloured end point is obtained.

Using 100ml sample -

Hardness ppm = (number tablets x 2) – 1

Contact IBC Water if further details are required.

WATER SOFTENER CALCULATIONS

MODEL AS1029-E

To ascertain **DAYS** between regeneration periods the following data or estimations are required.

(Let **N** be the number of days to be calculated)

- | | | | |
|-----|--|------|---|
| .1. | Water Hardness in mg/l | call | H |
| .2. | Water Softener Hardness Removal Capacity from Table 1 in grams | call | C |
| .3. | Daily Water Usage in litres | call | D |

For household situations allow 250 litres per person per day.

CALCULATION

$$N = \frac{1000 \times C}{D \times H}$$

Select nearest lower whole number

If necessary consult your dealer or IBC Water Treatment for advice on setting up the softener.

EXAMPLE

Household use for 4 people on 220 mg/l hard water using Model AS1029-E at 2030 grams capacity.

$$\begin{aligned} N &= \frac{1000 \times 2030}{1000 \times 220} \\ &= 9.2 \text{ days} \\ &= 9 \text{ days} \end{aligned}$$

LOCATION & INSTALLATION

1. The softener should be located indoors or protected from the weather.
2. The softener requires an inlet water pressure between 140kPa (20psi) and 690kPa (100psi) and 240 volt 10 amp electric power supply.
2. The softener should service all water lines in the house except the toilet and outside taps. The softener should be positioned on a level flat surface close to a drain or any other properly trapped waste outlet. The brass adaptors supplied are suitable for 20mm (3/4") female fittings and the softener should be connected to the supply with raw water to the inlet connector and softened water lines to the outlet as indicated on the valve. If soldering fittings are used, the adaptors should be removed from the valve whilst the fittings are being soldered.
3. When facing the front of the control the inlet is to the right and the outlet is to the left.
4. The system pressure must be between 140 kPa and 690 kPa psi.
5. If the system pressure is greater than 690kPa psi a **pressure reducing valve** must be installed.
6. The unit must be installed in accordance with local codes.
7. Do not over tighten connections.
8. Drain line ID must be at least 12mm.
9. Teflon tape should be used when installing the drain fitting into the control valve.
10. The drain line must be free of kinks.
11. A safety float with an air check is installed.
12. Insure all connections are tight.

Note: DO NOT use teflon tape when connecting the fitting kits to the control valve.

13. There are two drain lines, one from the brine tank and one from the softener valve, these lines must have an air gap of at least 40mm or twice the pipe diameter at the drain entrance. The drain line from the brine tank is gravity fed and hence the drain is required to be below the outlet elbow on the tank.
14. The drain line from the softener valve is under pressure during regeneration but for correct operation a maximum of 2.4m of 15NB pipe with no rises can be connected.

A manual Bypass should be installed.

PLACING THE SOFTENER IN SERVICE

1. Depress all Skipper Wheel Tabs.
2. Turn knob (B) counter-clockwise until cam follower (G) has fully depressed drain valve stem (H).
3. Ensure the power is turned off at this stage. Open the installed inlet valve slightly and slowly fill the mineral tank with water. Air and water will be expelled from drain line during the filling process. When the mineral tank is full and the stream of water from the drain line is steady, with no air bubbles, turn knob (B) counter-clockwise until cam follower (G) springs back into position, allowing the drain valve stem (H) to return to the shut-off position. Open the inlet valve fully. The salt storage tank will automatically fill to the proper level. To check the level, remove the cabinet cover plate. If for any reason it does not fill to this level, the brine valve float must be raised or lowered as required. This level will ensure the softener is set to produce maximum hardness removal.
4. Again turn knob (B) counter-clockwise until cam follower (G) has fully depressed drain valve stem (H). Water will run from drain line and water in the salt storage tank will be lowered approximately to the centre of the brine valve air shut-off assembly. Let water run about 5 minutes longer or until water is clear and then turn timer knob (B) counter-clockwise until cam follower (G) springs back into position, again allowing the drain valve stem (H) to return to the shut-off position. Open installed outlet valve and be sure that the installed by-pass valve is closed.

BRINE TANK

1. Place at least 25kg of a coarse refined grade of salt (Water Softener Salt) in the brine tank and **always maintain** dry salt above the water level.

The tank can hold up to 50kg of coarse salt.

2. Periodically it will be necessary to allow the salt to "run-out" and clean out the brine tank of accumulated silt and insoluble material.

REGENERATION

This automatic water softener is designed for a minimum complete regeneration time of 70 minutes. Under normal conditions the regeneration cycle should be set to 70 minutes. However, if the pressure is low, the time may have to be increased to 90 minutes.

REGENERATION FREQUENCY

The softener can be set to regenerate from once per day up to once per 12 days. To determine the correct number of regenerations refer to the Tables below for the model softener installed. The skipper wheel tabs are pushed in fully for the days selected for regeneration. The factory setting for the actual time of regeneration is 3am.

The tables below are based on an average daily water usage of 250 litres per person and using the maximum salt dosage to provide maximum capacity. The tables indicate a suggested number of regenerations per 12 day period.

The tabs selected will have to suit the suggested number eg. For 6 regenerations, select tabs, 1, 3, 5, 7, 9, 11. From the left column locate the number in the family, reading along and down from the hardness column, where the column intersect gives the number of regenerations for every 12 days.

MODEL AS0715-E

No. in family	Hardness MG/L CaCO_3									
	50	100	150	200	250	300	350	400	450	500
1	1	1	1	1	1	1	2	2	2	2
2	1	1	1	2	2	2	3	3	3	3
3	1	1	2	2	3	3	4	4	4	6
4	1	2	2	3	3	4	6	6	6	6
5	1	2	3	3	4	6	6	6		
6	1	2	3	4	6	6				

MODEL AS0922-E

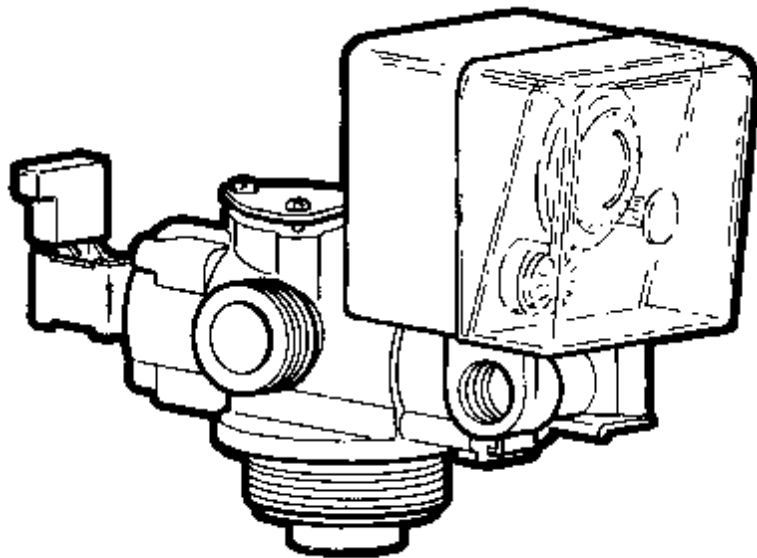
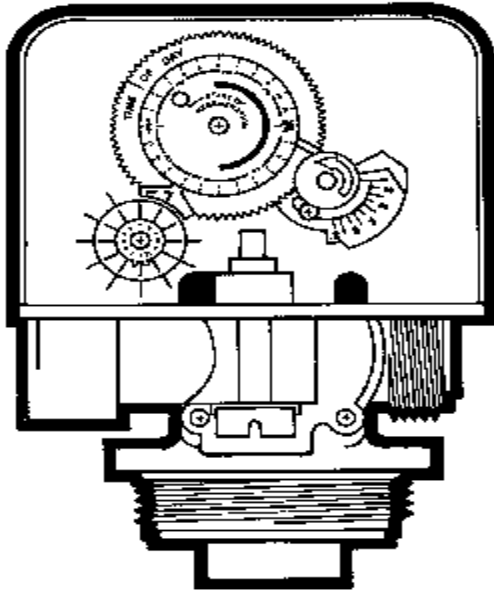
No. in family	Hardness MG/L CaCO_3									
	50	100	150	200	250	300	350	400	450	500
1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	2	1	2	2	2	2	2
3	1	1	1	2	2	2	3	3	3	3
4	1	1	2	2	2	3	3	4	4	4
5	1	1	2	2	3	3	4	4	6	6
6	1	2	2	3	3	4	6	6	6	6

MODEL AS1029-E

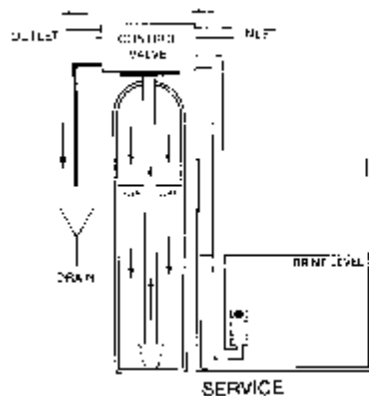
No. in family	Hardness MG/L CaCO_3									
	50	100	150	200	250	300	350	400	450	500
1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	2	2	2	2
3	1	1	1	1	2	2	2	2	3	3
4	1	1	1	2	2	2	3	3	3	4
5	1	1	2	2	2	3	3	4	4	4
6	1	1	2	2	3	3	4	4	6	6

541-030 VALVE

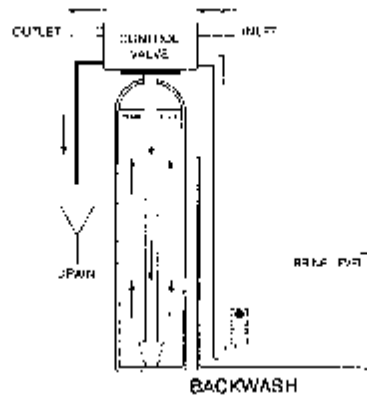
Water Conditioning Control System
Installation, Operating and Maintenance Manual



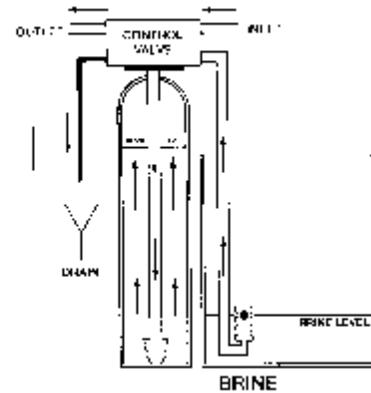
Cycle Flow Diagrams



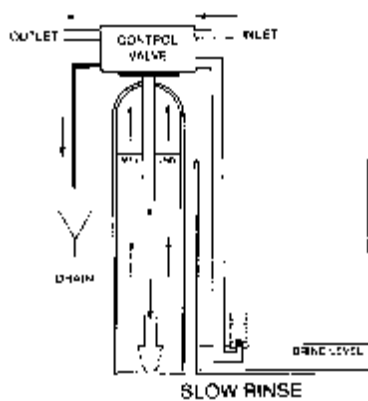
The service cycle position directs untreated water to flow down through the resin bed in the mineral tank and up through the riser tube. The water is conditioned when passing through the resin.



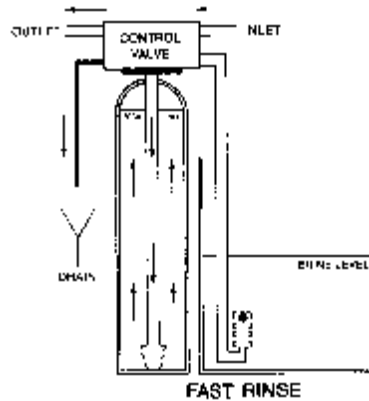
The backwash cycle position directs water to flow down through the riser tube and up through the resin bed and to drain. Foreign material and resin fines are flushed from the mineral tank during this cycle to prepare the resin bed for brining.



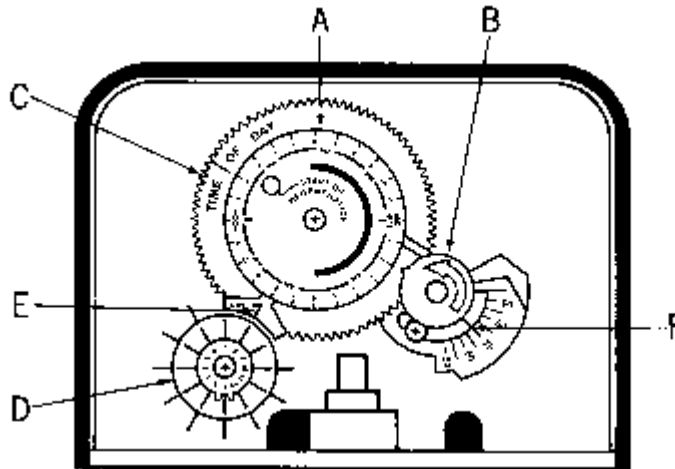
In brine draw, concentrated salt brine is drawn from the brine tank and directed to flow down through the riser tube and up through the resin bed to the drain. Brine is drawn until the air check in the brine tank closes.



The slow rinse cycle position directs a slow flow of water down through the riser tube and up through the resin bed to drain. This slow flow of water pushes the brine solution through the resin bed.



The fast rinse cycle position directs water to flow down through the riser tube and up through the media bed and to drain. Foreign material is flushed from the mineral tank during this cycle.



Programming

General Information

The control valve is designed to initiate regeneration according to pre-set factory parameters. Following the instructions contained in this section will allow the installer to customise the program for the users exact needs.

The regeneration cycle is controlled by the time cam located on the front of the timer assembly. The brine & slow rinse cycle can be adjusted from 50 minutes to 95 minutes in 5 minute increments. The backwash and fast rinse cycles are not adjustable.

Factory Default Settings

The following default cycle settings are preset into the control valve.

Cycles:

Backwash	11 1/2 minutes
Brine / Slow Rinse	70 minutes
Fast Rinse	4 1/2 minutes

Set Time of Regeneration

1. Remove the front dust cover from the timer assembly.
2. Rotate the Time of Regeneration plate (A) until the desired time appears in the window. Note A.M. or P.M.

Set Time of Day

1. Remove the front dust cover from the timer assembly.
2. Turn the Timer Knob (B) until the alignment mark located on the Time of Day Gear (C) points directly to the correct time of day. Note A.M. or P.M.

Set Regeneration Frequency

1. Remove the front dust cover from the timer assembly.
2. Pull all skipper wheel tabs up.
3. Rotate skipper wheel (D) until the number one tab aligns with the DAY mark (E)
4. Starting with the number one tab, push down the tabs to determine the days on which regeneration is required.

Regeneration Cycles

The backwash and fast rinse cycles are non-adjustable. Adjusting the brine and slow rinse cycle can be accessed according to the following procedure:

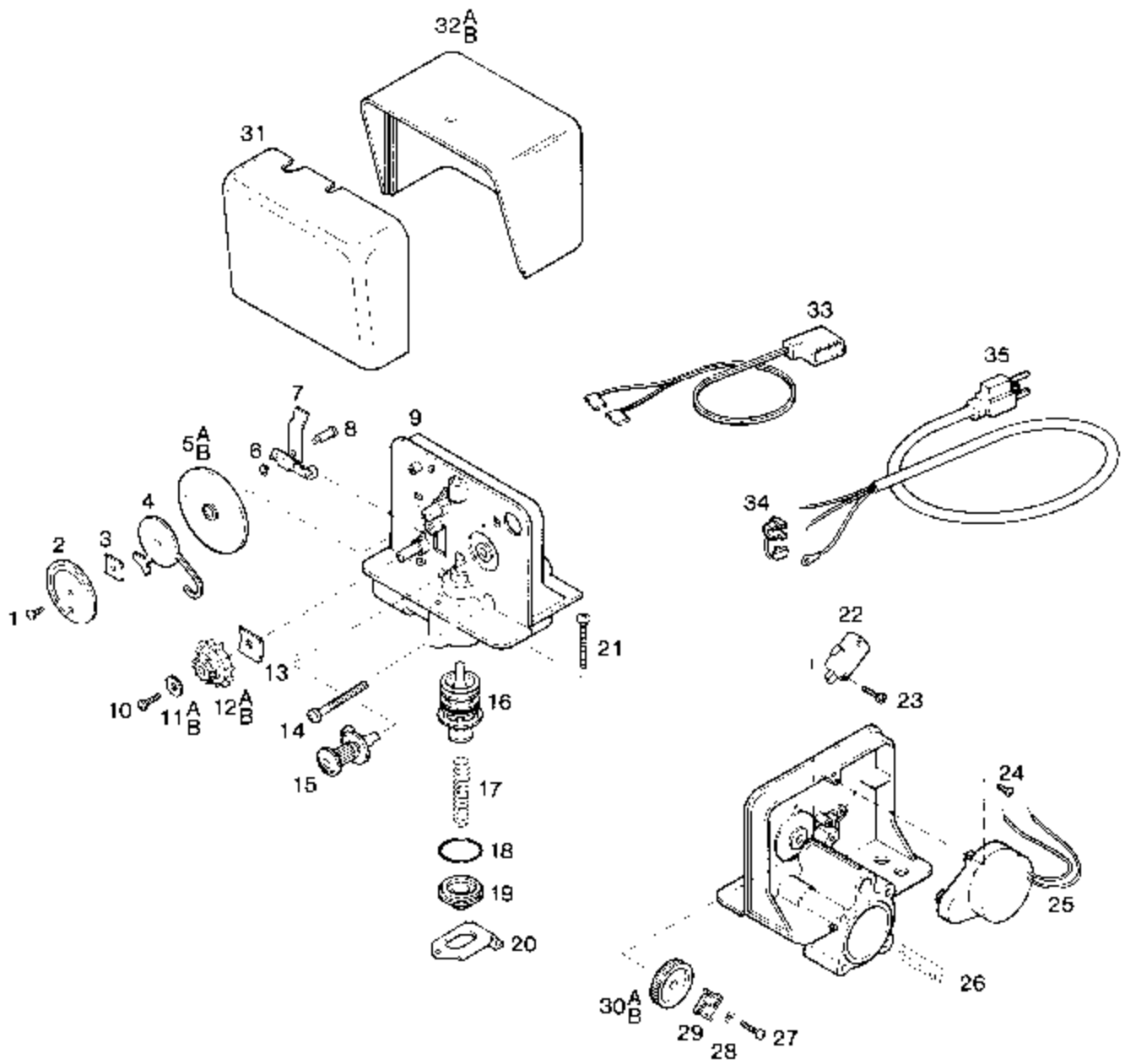
1. Loosen the screw located on top of the timer cover, remove front dust cover from timer assembly.
2. Turn Timer Knob (B) until setscrew on the time cam is visible.
3. Loosen setscrew, and using the alignment mark (F) located on the lower cam, move timing cam to the desired length of time.
4. Tighten setscrew and install dust cover.

Electromechanical Power Head Parts List

Item	P/N	Description	Qty
1.	15-76	Screw	1
2.	529-309	Time Dial	1
3.	525-303	Spring Washer, (Small)	1
4.	52-308	Locating Dial	1
5A.	529-232-1	Gear, Time of Day (12 Day)	1
5B.	529-232-2	Gear, Time of Day (7 Day)	1
6.	19-3	C -clip	1
7.	529-218	Actuator	1
8.	529-212	Spindle, Actuator	1
9.	529-333-1	Housing, Power Head	1
10.	15-185-10	Screw, Day Selector Wheel	1
11A.	525-274-1	Washer, Day Indicator (12 Day)	1
11B.	525-274-2	Washer, Day Indicator (7 Day)	1
12A.	525-241-2	Day Selector Wheel (12 Day)	1
12B.	525-241-4	Day Selector Wheel (7 Day)	1
13.	525-205	Spring Washer, (Large)	1
14.	15-87	Screw, Head Mount	4
15.	529-239-1	Cycle Cam & Knob Assembly	1
16.	529-219-3	Drain Plunger Assembly	1
17.	401-7	return Spring, Drain Plunger	1
18.	185-0221-1	O-ring, Plunger Cap	1
19.	529-286	Plunger Cap	1
20.	529-280	Retainer, Drain Plunger	1
21.	15-92-2	Screw, Retainer	1
22.	525-279-4	Switch & Terminal Assembly	1
23.	15-185-10	Screw, Switch	2
24.	15-76	Screw, Timer Motor	2
25.	30-77 *	Timer Motor	1
26.	516-221	Return Spring, Main Diaphragm	1
27.	15-185-10	Screw, Ratchet	1
28.	14-11	Washer, Ratchet	1
29.	525-260	Ratchet	1
30A.	525-254-2	Gear Ratchet (12 Day)	1
30B.	525-254-5	Gear Ratchet (7 Day)	1
31.	529-234 **	Front Cover	1
32A.	529-220-1	Rear Cover (Gray)	1
32B.	529-220-2	Rear Cover (White)	1
33.	529-290-14BK	Solenoid Cord	1
34.	28-8-28	Strain Relief	1
35.	28-142-2	Power Cord (120 Volt)	1

* Indicate Voltage

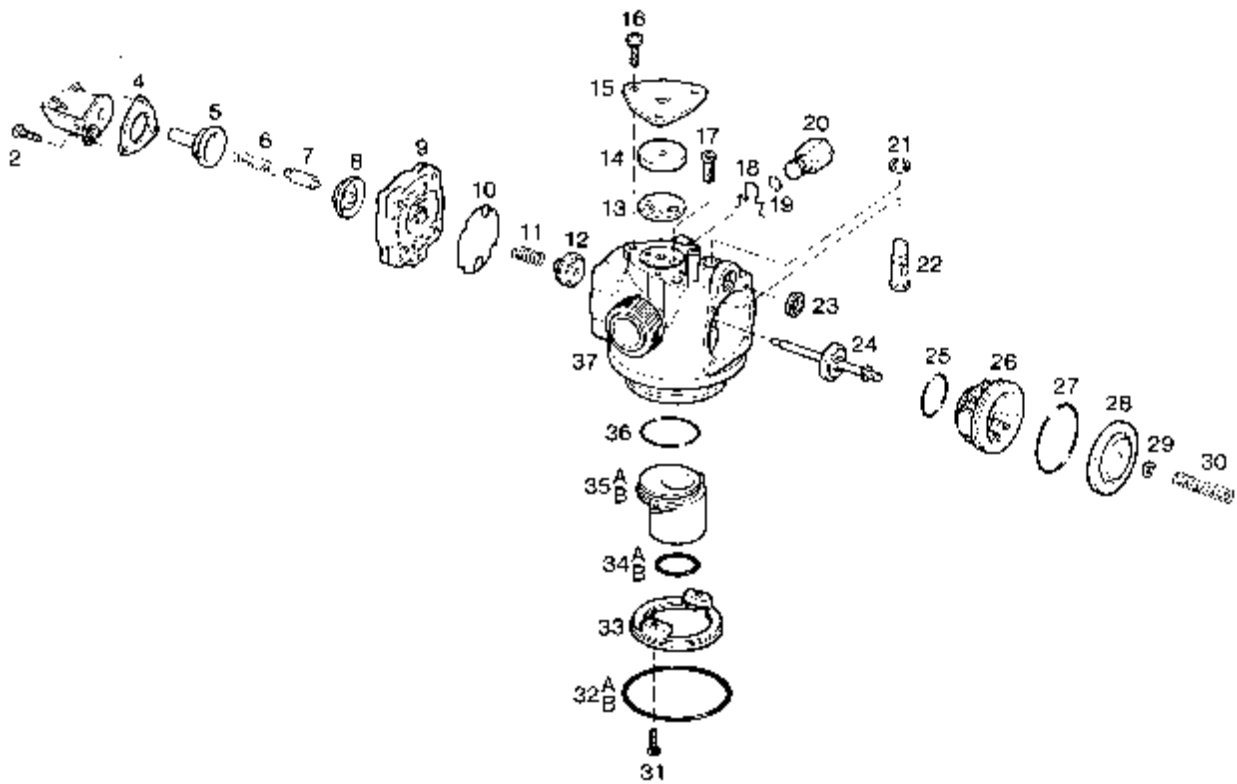
** Indicate Opaque or Clear



Valve Body Parts List

Item	P/N	Description	Qty
1.	15-88	Screw, Backcap	4
2.	15-90	Screw, Solenoid Mount	
3.	413-134 *	Solenoid Coil (Specify Voltage)	
4.	413-60	Spacer	
5.	413-58	Guide	1
6.	413-62	Spring, Plunger	1
7.	413-61	Plunger, Solenoid	1
8.	413-59	Diaphragm, Solenoid	1
9.	541-208-2	Backcap, 5 Cycle Fast Rinse	1
10.	541-206	Seal, Backcap	1
11.	541-239	Return Spring, Check Disc	1
12.	541-246	Check Disc	1
13.	541-325	Gasket, Injector	1
14.	428-	Injector (Specify Size)	1
15.	541-221	Cover Plate, Injector	1
16.	15-89	Screw, Injector Mount	3
17.	413-13	Filter Screen, Injector	1
18.	541-254	Spring Clip	1
19.	186-111-N	O-ring, Brine Fitting	1
20.	541-250-1	Brine Fitting	1
21.	19-19	C-Clip, Backwash Flow Adjuster	1
22.	541-243	Backwash Flow Adjuster w/o-rings	1
23.	529-244	Gasket, Cross Over Port	1
24.	541-244	Body Stem Assembly	1
25.	185-024-1	O-ring (Small), Seat Insert	1
26.	541-204	Seat Insert	1
27.	185-028-12	O-ring (Large), Seat Insert	1
28.	541-256	Main Diaphragm	1
29.	19-3	C-clip, Main Diaphragm	1
30.	516-221	Return Spring, Main Diaphragm	1
31.	19-90	Screw, Adapter Ring	2
32A.	185-231-1	O-ring, Structural Tank	1
32B.	186-105	O-ring, Park Tank	1
33.	541-232	Adapter Ring	1
34A.	185-211-1	O-ring, 13/16" Riser Adapter	1
34B.	185-214-1	O-ring, 1.050" Riser Adapter	1
35A.	541-205	Power Cord (120 Volt)	1
35B.	541-218	13/16" Riser Adapter	1
36.	185-029-1	1.050" Riser Adapter	1
37.	541-257-1	Valve Body & Seal	1

* Indicate Voltage



Troubleshooting Guide

Problem	Cause	Solution
1. Unit fails to regenerate.	<ul style="list-style-type: none"> a. Faulty electrical circuit. b. Defective clock motor. c. Low inlet pressure. d. Drain line restricted. e. All skipper tabs in the "out" position. f. The brine injector is plugged. g. Main diaphragm is torn. h. Timer knob out of alignment with Time Gear. i. Defective solenoid coil. 	<ul style="list-style-type: none"> a. Verify electrical service (fuse, circuit breaker, light switch, pull chain, power cord). b. Replace the clock motor. c. Verify that the service inlet pressure is a minimum of 20 psi. d. Insure the drain line is free of kinks. e. Push desired number of skipper tabs to the "in" position. f. Clean or replace injector. g. Replace diaphragm. h. Realign the Knob and Gear. i. Test and replace the solenoid coil.
2. Hard water to service.	<ul style="list-style-type: none"> a. The bypass valve is open or faulty. b. No salt in storage tank. c. Not enough water in the storage tank. d. Unit fails to draw brine. e. Excessive water usage. f. Unit not regenerating. g. Loss of resin. h. Change in raw water hardness. i. Leak at the distributor tube. 	<ul style="list-style-type: none"> a. Close bypass valve. b. Add salt. c. Verify that the safety float is properly set. d. See symptom/cause # 6. e. Check regeneration frequency. f. See symptom/cause # 1. g. See symptom/cause # 4. h. Test water hardness. i. Verify that the distributor tube is seated correctly and is not cracked.
3. Excessive salt usage.	<ul style="list-style-type: none"> a. Excessive water in storage tank. b. Regeneration is taking place too frequently. c. Faulty safety float. 	<ul style="list-style-type: none"> a. Verify that the safety float is properly set. b. Check regeneration frequency. c. Replace safety float.
4. Loss of resin.	<ul style="list-style-type: none"> a. Faulty air check in storage tank. b. Leak at the distributor tube. c. Backwash flow improperly adjusted. 	<ul style="list-style-type: none"> a. Clean or replace air check. b. Verify that the distributor tube is seated correctly and is not cracked. c. Verify the backwash flow.
5. Salt water to service.	<ul style="list-style-type: none"> a. Brine/slow rinse cycle time set too short. b. Excessive water in the storage tank. c. Brine injector undersized. 	<ul style="list-style-type: none"> a. Verify cycle time. b. Verify that the safety float is adjusted correctly and properly. c. Verify proper injector selection.
6. Control fails to draw brine.	<ul style="list-style-type: none"> a. Brine injector plugged. b. Filter screen plugged c. Loose brine line connection. d. Drain line is restricted e. Low inlet pressure. f. Main diaphragm is torn. g. Solenoid plunger stuck open. 	<ul style="list-style-type: none"> a. Clean and replace injector. b. Clean and replace screen. c. Verify that all the brine line connections are tight. d. Insure that the drain line is not kinked or plugged. e. Verify that the service inlet pressure is a minimum of 20 psi. f. Replace diaphragm. g. Clean or replace the solenoid plunger assembly.
7. Continuous flow to drain.	<ul style="list-style-type: none"> a. Drain plunger stuck open. b. Clock motor stalled. 	<ul style="list-style-type: none"> a. Clean or replace the drain plunger assembly. b. Replace the clock motor.
8. Loss of water pressure.	<ul style="list-style-type: none"> a. Iron build up in mineral tank. b. Lower distributor basket crushed. c. Resin has lost mechanical strength. 	<ul style="list-style-type: none"> a. Increase salt dosage or regenerate more frequently. b. Replace basket and verify that the distributor is cut 1/2 inch below the top of the tank threads. c. Replace resin

Parts Replacement

General Information

Familiarise yourself with the parts replacement procedures and component parts thoroughly before attempting any repair.

Insure that the unit is in the bypass position and relieve the system pressure before attempting any repair procedure.

WARNING! Disconnect all electrical power to the unit before attempting and repair procedure.

Required Tools

The following tools are required to perform routine maintenance on this valve:

- Phillips Screwdriver
- Needle Nose Pliers
- Adjustable Wrench
- Small Standard Screwdriver

Timer Assembly Replacement

1. Disconnect all electrical power to the control.
2. Place the bypass valve into "bypass" position.
3. Remove the front dust cover from the timer assembly.
4. Relieve the system pressure by using a screwdriver to press down on the drain plunger opening the drain line.
5. Disconnect the solenoid cable from the solenoid coil.
6. Remove the four (4) head mounting screws.
7. Lift the timer assembly away from the valve body.
8. Follow these steps in reverse to reinstall the timer assembly.

Note: Prior to re-installment insure that the main return spring is centred over the main diaphragm.

Timer Motor Replacement

1. Disconnect all electrical power to the control.
2. Remove both the front dust cover and the rear timer cover.
3. Disconnect the two (2) wire nuts from the timer motor leads.
4. Remove the two (2) motor mount screws.
5. Lift the motor away from the timer assembly.
6. Follow these steps in reverse to reinstall the timer assembly.

Main Diaphragm Replacement

1. Disconnect all electrical power to the control.
2. Place the bypass valve into the "bypass" position.
3. Remove the front dust cover from the timer assembly.
4. Relieve the system pressure by using a screwdriver to press down on the drain plunger opening the drain line.
5. Disconnect the solenoid cable from the solenoid coil.
6. Remove the four (4) head mounting screws.
7. Lift the timer assembly away from the valve body.
8. Remove the c-clip from the centre of the diaphragm.
9. Lift the diaphragm away from the body stem assembly.
7. Follow these steps in reverse to reinstall the timer assembly.

Note: Prior to re-installment insure that the main return spring is centred over the main diaphragm and that the outside edges of the main diaphragm are tucked into the valve body.

Drain Plunger Replacement

1. Disconnect all electrical power to the control.
2. Place the bypass valve into "bypass" position.
3. Remove the front dust cover from the timer assembly.
4. Relieve the system pressure by using a screwdriver to press down on the drain plunger opening the drain line.
5. Remove the retaining screw located below the "Time of Day" gear.
6. Lift the retainer down and away from the timer assembly.
7. Press down on the drain plunger to remove it from the valve body.
8. Inspect the plunger o-rings and centre cup for wear.
9. Clean out the plunger orifice in valve body.
10. Use a Dow 111 Silicone based lubricant to lightly lubricate the plunger o-rings and the valve body orifice.
11. Follow these steps in reverse to re-install drain plunger.

Injector and Filter Screen Replacement

1. Disconnect all electrical power to the control.
2. Place the bypass valve into the "bypass" position.
3. Remove the front dust cover from the timer assembly.
4. Relieve the system pressure by using a screwdriver to press down on the drain plunger opening the drain.
5. Remove the three (3) screws from the triangular cover plate.
6. Lift away the cover plate.
7. Remove the injector from valve body and separate the gasket from the injector.
8. Inspect the injector cavities for blockage.
9. Remove the filter screen from the valve body and inspect the screen for dirt. Replace if necessary.
10. Follow these steps in reverse to re-install the riser assembly.

Note: After backing out the drain seat the seat may still require minor adjustment to eliminate leaks. Turn the seat in or out until the leak to drain stops.

Riser Replacement

1. Disconnect all the electrical power to the control.
2. Place the bypass valve into the "bypass" position.
3. Relieve the system pressure.
4. Disconnect the unit from the bypass connections.
5. Remove the unit from the resin tank.
6. Turn out the upper distributor basket from the unit adapter ring.
7. Remove the two (2) adapter hold down screws, and lift away the adapter ring.
8. Separate riser assembly from valve body.
9. Clean the riser o-rings and wipe out the valve body cavity.
10. Use the Dow 111 Silicone based lubricant to lightly lubricate the riser o-rings and the valve body cavity.
11. Follow these steps in reverse to re-install the riser assembly.

Check Disc Replacement

1. Disconnect all electrical power to the control.
2. Place the bypass valve into the "bypass" position.
3. Relieve system pressure.
4. Disconnect the solenoid cable from the solenoid coil.
5. Remove the four (4) screws from the backcap.
6. Place a hand under the backcap and remove the backcap. The check disc return spring will fall into your hand.
7. Remove the check disc from the back of the body stem assembly.
8. Inspect the rubber seal on the check disc for wear. Clean or replace if necessary.
9. Re-install the check disc on body stem assembly.
10. Place a small amount of Dow 111 silicone based lubricant on the back cap centre post.
11. Insure that the back cap gasket is properly seated in Backcap.
12. Install check disc return spring into centre post.
13. Align the mark on top of the back cap with the mark on the valve body and carefully direct open end of return spring into centre post of the check disc.
14. Install the four (4) back cap screws.
15. Pressurise system and check for leaks.

Body Stem Assembly Replacement

1. Disconnect all electrical power to the control.
2. Place the bypass valve into the "bypass" position.
3. Remove the front dust cover from the timer assembly.
4. Relieve the system pressure by using a screwdriver to press down on the drain plunger to the open drain line.
5. Disconnect the solenoid cable from the solenoid coil.
6. Remove the four (4) head mounting screws.
7. Lift the timer assembly away from the valve body.
8. Remove the c-clip from the centre of the diaphragm.
9. Lift the diaphragm away from the body stem assembly.
10. Remove the seat assembly.
11. Lift out the body stem assembly.
12. Inspect the centre check disc rubber seal for wear. Clean or replace if necessary.
13. Re-install the body stem assembly.
14. Lightly lubricate the seat assembly o-rings with a Dow 111 Silicone based lubricant.

12. Follow these steps in reverse to re-install the backwash adjustment valve.

15. Re-install the seat assembly, insure that one of the two (2) flats is facing towards the top of the valve body.
16. Re-install the main diaphragm and the timer assembly.
17. It is now necessary to reseal the rear check disc. Refer to the Check Disc Replacement procedure.

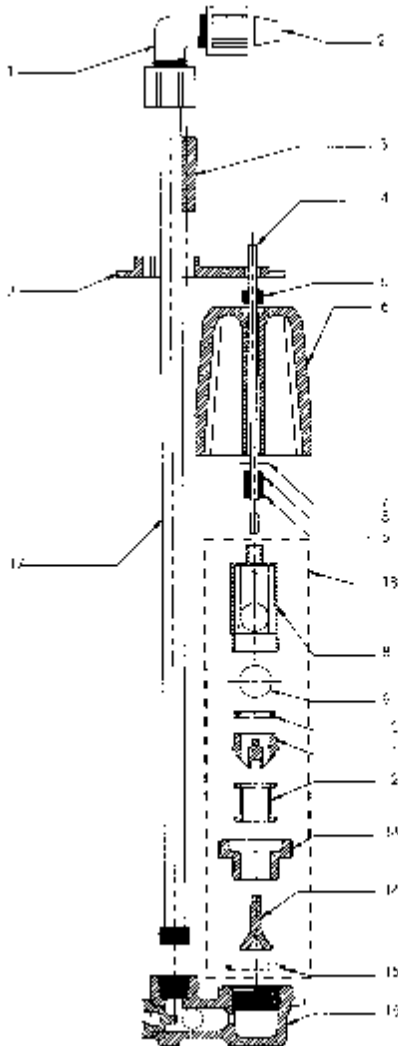
Backwash Adjustment Valve Replacement

1. Place the bypass valve into the "bypass" position.
2. Relieve the system pressure. Remove the four (4) head mounting screws.
3. Lift the timer assembly away from the valve body.
4. Remove the c-clip from the centre of the diaphragm.
5. Lift the diaphragm away from the body stem assembly.
6. Remove the seat assembly.
7. Disconnect the large c-clip located on top of the backwash adjustment valve.
8. Press the backwash adjustment valve down and out through the valve body assembly.
9. Inspect the o-rings on the valve for wear. Clean or replace the valve assembly if necessary.
10. Lightly lubricate the o-rings with a Dow 111 Silicone based lubricant.
11. Follow these steps in reverse to re-install the backwash adjustment valve.

Solenoid Assembly Replacement

1. Disconnect all electrical power to the control.
2. Place the bypass valve into the "bypass" position.
3. Relieve the system pressure.
4. Disconnect the solenoid cable from the solenoid coil.
5. Remove the one (1) solenoid mounting screw.
6. Lift away the solenoid coil. Test coil and replace if necessary.
7. Remove the three (3) remaining screws, which hold down the solenoid plunger retainer.
8. Place a hand under the plunger retainer while lifting away the retainer assembly.
9. Verify that the plunger moves back and forth against the return spring without sticking. Clean or replace if necessary.
10. Separate the solenoid diaphragm from the valve body. Verify that the diaphragm cavity in the valve body is free of debris.
11. Inspect the diaphragm for rips or tears. The diaphragm should have a hole in the centre and a smaller "pin" hole off centre

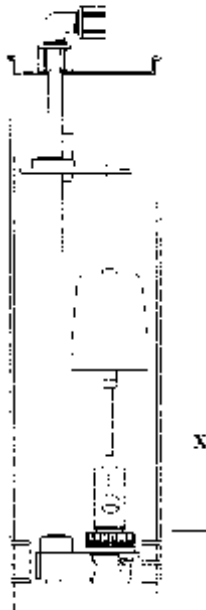
BRINE VALVE ASSEMBLY



Detailed Assembly Information

Drawing Number	Order Number	Description
1	S1366	3/8" x 3/8" union elbow (must be purchased separately)
2	S1197	3/8" polytube insert (must be purchased separately)
3 or 3	H7041	1/4" guide and lock (sold as a set)
3	H7041 3/8	3/8" guide and lock (sold as a set)
4 or 4	H7038	float rod - 14"
4	H7038-01	float rod - 24"
5	H7039	float grommet (2 required for Standard, 3 required for Control and High Flow)
6 or 6	H7040	light bell float (for Standard)
6	H7040-02	heavy bell float (for Control and High Flow)
7	H7042	washer (for Standard only)
8	H7046	ball cage
9	H7047	air check ball
10	H7048	quad cup seat
11	H7046-C	ball cage cone
12	H7052	spool seat
13	H7044	crown nut
14	H7051	stern
15	H7035	quad ring
16 or 16	H7030	464 Standard body with ball (black)
16 or 16	H7030-01	464 High Flow body, no ball (white)
16	H7030-02	464 Control Flow body, with ball (blue)
17 or 17	H1035-26.75"	3/8" x 26.75" rigid PVC (for 28" brine wells)
17 or 17	H1035-27.75"	3/8" x 27.75" rigid PVC (for 29" brine wells)
17 or 17	H1035-28.75"	3/8" x 28.75" rigid PVC (for 30" brine wells)
17	H1035-34.75"	3/8" x 34.75" rigid PVC (for 36" brine wells)
18	H7028	air check assembly

*Riser pipe includes 1/4" male threaded fitting on one end.



Windsor Cabinet

Model	Float Distance (X)
AS0715-E	100mm
AS0922-E	200mm
AS1029-E	260mm

Adjustment of Softener Brine Valve

1. Lift float rod to full up position.
2. Set float to distance shown. Measure from the top of the crown nut to the bottom of the float.